

A-2

U.S. Patent Nos. 6,337,746 & 6,618,157

ATTACHMENT 2

Overview of Brother MFC-6490CW Printer

Plaintiff accuses the making, using, selling, offering for sale and importation of Brother color printer models MFC-795CW, MFC-990CW, DCP-165C, DCP-395CN, MFC-250C, MFC-255C, MFC-295C, MFC-3360C, MFC-495CW, MFC-5890CN, DCP-110C, DCP-120C, DCP-J125, DCP-130C, DCP-330C, DCP-350C, DCP-385C, DCP-585CW, MFC-210C, MFC-J220, MFC-230C, MFC-240C, MFC-J265W, MFC-J270W, MFC-290C, MFC-3220C, MFC-3240C, MFC-3320C, MFC-3340C, MFC-3420C, MFC-3820CN, MFC-J410W, MFC-J415w, MFC-420CN, MFC-4420C, MFC-465CN, MFC-4820C, MFC-490CW, MFC-5440CN, MFC-5460CN, MFC-5490CN, MFC-5840CN, MFC-5860CN, MFC-5895CW, MFC-J615W, MFC-620CN, MFC-J630W, MFC-640CW, MFC-685CW, MFC-790CW, MFC-795CW, MFC-820CW, MFC-885CW, MFC-990CW, MFC-J6510DW, MFC-6490CW, MFC-J6710DW, MFC-6890CDW, MFC-J6910w of constituting direct infringement of U.S. Patent Nos. 6,337,746 and 6,618,157 (hereinafter “the Patents-in-Suit”). As an exemplary and typical model, the MFC-6490CW printer is charted below. The term “Accused System and Method” means the foregoing printer models sold by Brother and all other models that are substantially similar.

Plaintiff further accuses Brother of indirectly infringing the Patents-in-Suit through providing, authorizing and instructing regarding the Accused System and Method to others, including Brother’s customers. Installing the Accused System and Method and the operation thereof directly infringe the asserted claims. Brother intends to cause infringement by its customers and users. Brother instructs users to install the software and associated hardware of the Accused System and Method. As such, Brother instructs users to configure and operate the Accused System and Method in an infringing manner. Brother also provides installation, maintenance and support services for the Accused System and Method, including providing instruction, tools, manuals, guides, online materials, support and consulting services.

The asserted claims include elements that are implemented, at least in part, by software in the Accused System and Method. The precise processes and algorithms used in them are held secret, at least in part, and are not publicly available in their entirety. An analysis of Brother’s documentation is necessary to fully and accurately describe all infringing features and functionality of the Accused System and Method and, accordingly, plaintiff reserves the right to supplement these contentions once such information is made available to plaintiff. Furthermore, plaintiff reserves the right to revise these contentions in view of the Court’s final claim construction in this action.

U.S. Patent Nos. 6,337,746 & 6,618,157



U.S. Patent No. 6,337,746

1. Apparatus for printing a graphic image on a substrate, comprising:	<p>The Accused System and Method is designed to print on a substrate. For example, the Accused System and Method is used for cut-sheet materials.</p> <div>Printback to top</div> <table><tr><td>Print Technology</td><td>Color Inkjet Technology</td></tr><tr><td>Maximum Printing Size</td><td>Up to 11" x 17" (Ledger)</td></tr><tr><td>Consumable Type</td><td>4-Cartridge Ink System</td></tr><tr><td>Max. Black Print Speed (ppm)</td><td>35ppm Black†</td></tr><tr><td>Max. Color Print Speed (ppm)</td><td>28ppm Color†</td></tr><tr><td>Print Resolution (maximum dpi)</td><td>Up to 6000 x 1200 dpi†</td></tr><tr><td>Borderless Printing</td><td>Yes†</td></tr><tr><td>Standard Input Paper Capacity (sheets)†</td><td>Up to 400-Sheet Input Capacity</td></tr><tr><td>Multi-purpose Tray</td><td>N/A</td></tr><tr><td>Standard Interface(s)</td><td>Hi-Speed USB 2.0, Ethernet, Wireless (802.11b/g), PictBridge Interface, Media Card Slots and USB Flash Memory Drive</td></tr><tr><td>Printer Driver Compatibility†</td><td>Windows® / Mac OS®</td></tr><tr><td>Mobile device printing app†</td><td>Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Apple® iPhone®, iPad™, and iPod touch® or Android™ smartphone</td></tr><tr><td>Emulation(s)</td><td>GDI</td></tr><tr><td>Secure Print Function</td><td>Yes</td></tr><tr><td>Maximum Monthly Duty Cycle†</td><td>5,000 Printed Pages</td></tr><tr><td>Recommended Monthly Print Volume†</td><td>250 - 2000 Printed Pages</td></tr></table> <p>http://www.brother-usa.com/MFC/modeldetail.aspx?PRODUCTID=MFC6490CW&tab=spec (3/31/11)</p>	Print Technology	Color Inkjet Technology	Maximum Printing Size	Up to 11" x 17" (Ledger)	Consumable Type	4-Cartridge Ink System	Max. Black Print Speed (ppm)	35ppm Black†	Max. Color Print Speed (ppm)	28ppm Color†	Print Resolution (maximum dpi)	Up to 6000 x 1200 dpi†	Borderless Printing	Yes†	Standard Input Paper Capacity (sheets)†	Up to 400-Sheet Input Capacity	Multi-purpose Tray	N/A	Standard Interface(s)	Hi-Speed USB 2.0, Ethernet, Wireless (802.11b/g), PictBridge Interface, Media Card Slots and USB Flash Memory Drive	Printer Driver Compatibility†	Windows® / Mac OS®	Mobile device printing app†	Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Apple® iPhone®, iPad™, and iPod touch® or Android™ smartphone	Emulation(s)	GDI	Secure Print Function	Yes	Maximum Monthly Duty Cycle†	5,000 Printed Pages	Recommended Monthly Print Volume†	250 - 2000 Printed Pages
Print Technology	Color Inkjet Technology																																
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Standard Interface(s)	Hi-Speed USB 2.0, Ethernet, Wireless (802.11b/g), PictBridge Interface, Media Card Slots and USB Flash Memory Drive																																
Printer Driver Compatibility†	Windows® / Mac OS®																																
Mobile device printing app†	Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Apple® iPhone®, iPad™, and iPod touch® or Android™ smartphone																																
Emulation(s)	GDI																																
Secure Print Function	Yes																																
Maximum Monthly Duty Cycle†	5,000 Printed Pages																																
Recommended Monthly Print Volume†	250 - 2000 Printed Pages																																
a computer containing at least one motherboard which carries a data bus and a random access memory, said computer being controlled by an operating	<p>The Accused System and Method is driven by a computer containing a motherboard with a data bus and memory. The computer is controlled by an operating system.</p>																																

U.S. Patent Nos. 6,337,746 & 6,618,157

system;

MFC-6490CW Supported PC Software Functions			
Operating System Sistemas operativos		Supported Functions Funciones Soportadas	Interface Conectividad
Windows®1	Windows® 2000 Professional ⁵	Printing, PC Fax ⁴ , Scanning, Removable Disk ⁷	USB, 10/100 Base-TX (Ethernet), Wireless 802.11b/g
	Windows® XP Home ^{2,5} Windows® XP Professional ^{2,5}		
	Windows® XP Professional x64 Edition ²	Impresión, Escaneado, PC Fax ⁴ , Disco removable ⁷	
	Windows Vista® ²		
	Mac OS® X 10.2.4 - 10.4.3	Printing, Scanning, PC Fax Send ⁴ , Removable Disk Printing ⁷ Impresión, Escaneado, PC Fax (solo enviar ⁴), Disco removable ⁷	
Mac OS® X 10.4.4 or greater	Printing, Scanning, PC Fax Send ⁴ , Removable Disk Printing ⁷ Impresión, Escaneado, PC Fax (solo enviar ⁴), Disco removable ⁷		

MFC-6490CW Minimum System Requirements				
Operating System Sistemas operativos		Minimum Processor Requerimiento mínimo de procesador	Recommended RAM Requerimiento de memoria	Required HARD Disk Space Espacio requerido en el disco duro
Windows®1,4	Windows® 2000 Professional ⁵	Intel® Pentium II® or equivalent Intel® Pentium II® o equivalente	256MB	450MB
	Windows® XP Home ^{2,5} Windows® XP Professional ^{2,5}			
	Windows® XP Professional x64 Edition ^{2,5}	64-bit processors Procesadores 64-bit	512MB	1.2GB
	Windows Vista® ²	Intel® Pentium® 4 or equivalent 64-bit processors Intel® Pentium® 4 o equivalente Procesadores 64-bit	1GB	
Mac®6	Mac OS® X 10.2.4 - 10.4.3	PowerPC G4/G5 PowerPC G3 350MHz	256MB	480MB
	Mac OS® X 10.4.4 or greater	PowerPC G4/G5 Intel® Core™ Processor	1GB	

<http://www.brother-usa.com/MFC/ModelDisclaimer.aspx?Model=MFC6490CW#SysReqs> (3/31/11)

Full Driver & Software Package

We recommend this download to get the most functionality out of your Brother machine. This is a comprehensive file containing available drivers and software for the Brother machine.

Language	Version	Size	Release Date	File
English	B1	40.95MB	03/04/2009	Download & Information

[Top](#)

http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download_index.html?reg=us&c=us&lang=en&prod=mfc6490cw_all&dlid=&flang=English&os=7&type2=-1 (3/31/11)

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USB

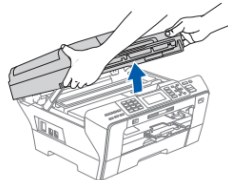
Windows®


17 Connect the USB cable

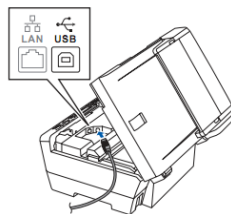
Important

- DO NOT connect the machine to a USB port on a keyboard or a non-powered USB hub.
- Connect the machine directly to your computer.

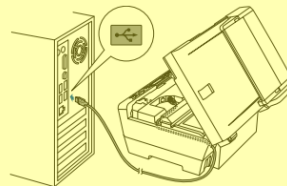
a Lift the scanner cover into the open position.



b Connect the USB cable to the USB socket marked with a  symbol. You will find the USB socket inside the machine on the right as shown below.



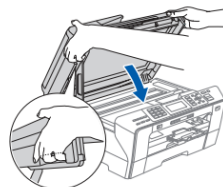
c Carefully route the USB cable through the trench and out the back of the machine as shown below and connect the cable to your computer.



Important

Make sure that the cable does not restrict the cover from closing, or an error may occur.

d Gently close the scanner cover using the finger holds on both sides of it.



WARNING

Be careful not to trap your fingers under the scanner cover.
Always use the finger holds provided on both sides of the scanner cover when opening and closing it.

http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002363/mfc6490w_usaeng_qsg_LS5745001_b.pdf (3/31/11)

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MFC-6490CW Supported PC Software Functions			
Operating System Sistemas operativos		Supported Functions Funciones Soportadas	Interface Conectividad
Windows®1	Windows® 2000 Professional ⁵	Printing, PC Fax ⁴ , Scanning, Removable Disk ⁷ Impresión, Escaneado, PC Fax ⁴ , Disco removible ⁷	USB, 10/100 Base-TX (Ethernet), Wireless 802.11b/g
	Windows® XP Home ^{2,5}		
	Windows® XP Professional ^{2,5}		
	Windows® XP Professional x64 Edition ²		
	Windows Vista® ²		
Mac®6	Mac OS® X 10.2.4 - 10.4.3	Printing, Scanning, PC Fax Send ⁴ , Removable Disk Printing ⁷ Impresión, Escaneado, PC Fax (solo enviar ⁴), Disco removible ⁷	USB ³ , 10/100 Base-TX (Ethernet), Wireless 802.11b/g
	Mac OS® X 10.4.4 or greater	Printing, Scanning, PC Fax Send ⁴ , Removable Disk Printing ⁷ Impresión, Escaneado, PC Fax (solo enviar ⁴), Disco removible ⁷	USB ³ , 10/100 Base-TX (Ethernet), Wireless 802.11b/g

MFC-6490CW Minimum System Requirements				
Operating System Sistemas operativos		Minimum Processor Requerimiento mínimo de procesador	Recommended RAM Requerimiento de memoria	Required HARD Disk Space Espacio requerido en el disco duro
Windows®1,4	Windows® 2000 Professional ⁵	Intel® Pentium II® or equivalent Intel® Pentium II® o equivalente	256MB	450MB
	Windows® XP Home ^{2,5}			
	Windows® XP Professional ^{2,5}	64-bit processors Procesadores 64-bit	512MB	1.2GB
	Windows Vista® ²	Intel® Pentium® 4 or equivalent 64-bit processors Intel® Pentium® 4 o equivalente Procesadores 64-bit	1GB	
Mac®6	Mac OS® X 10.2.4 - 10.4.3	PowerPC G4/G5 PowerPC G3 350MHz	256MB	480MB
	Mac OS® X 10.4.4 or greater	PowerPC G4/G5 Intel® Core™ Processor	1GB	

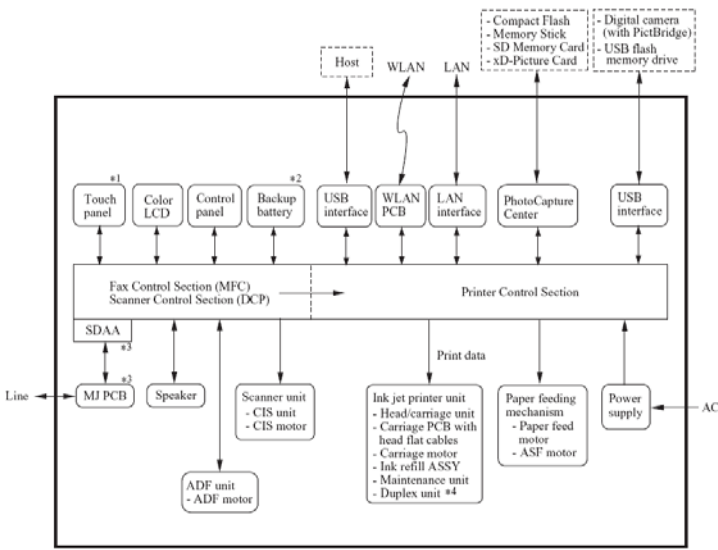
<http://www.brother->

[usa.com/MFC/ModelDisclaimer.aspx?Model=MFC6490CW#SysReqs](http://www.brother-usa.com/MFC/ModelDisclaimer.aspx?Model=MFC6490CW#SysReqs) (3/31/11)

at least one interface card connected to said data bus and having a serial port connected to the data bus, a printing device interface, and means for transferring stored image data from said random access memory to said printing device interface;

The Accused System and Method incorporate an interface card connected to a data bus. The interface card includes serial ports (including Ethernet and/or USB).

U.S. Patent Nos. 6,337,746 & 6,618,157



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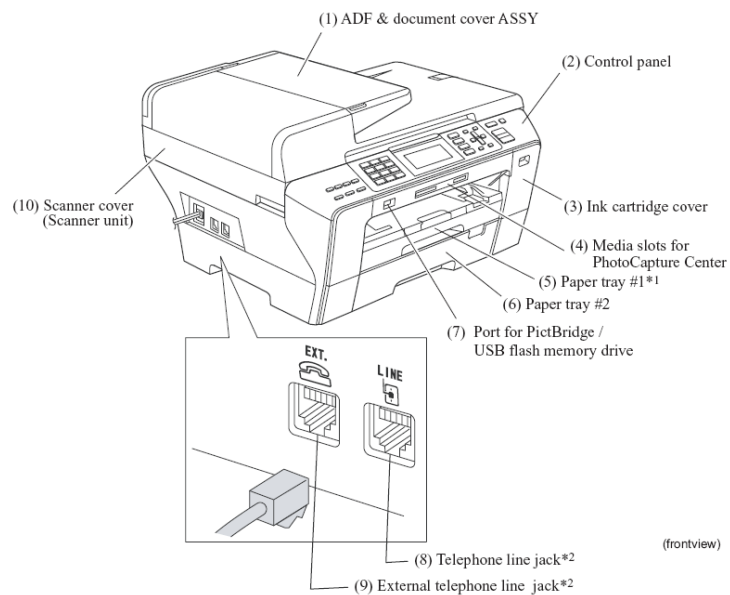


U.S. Patent Nos. 6,337,746 & 6,618,157

USB and Ethernet



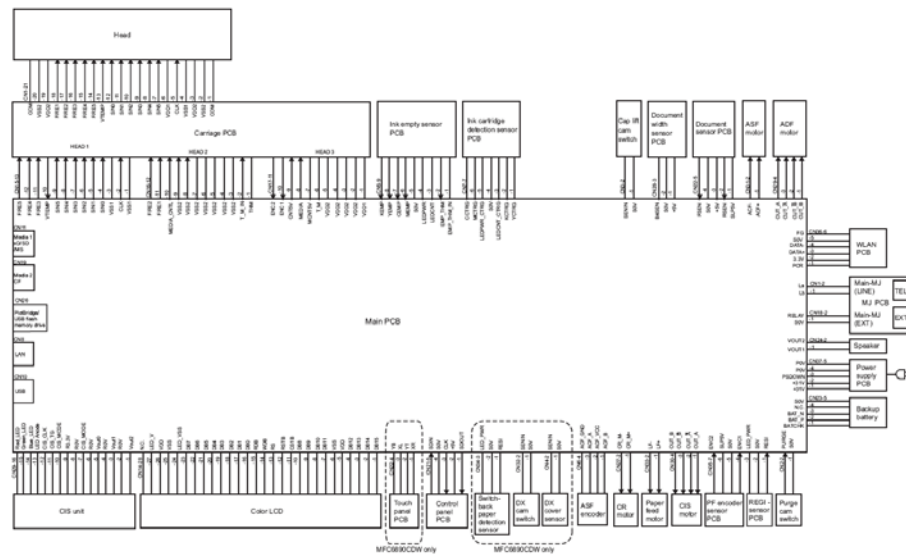
U.S. Patent Nos. 6,337,746 & 6,618,157



*1 DX paper tray #1 for duplex print models
*2 MFC only

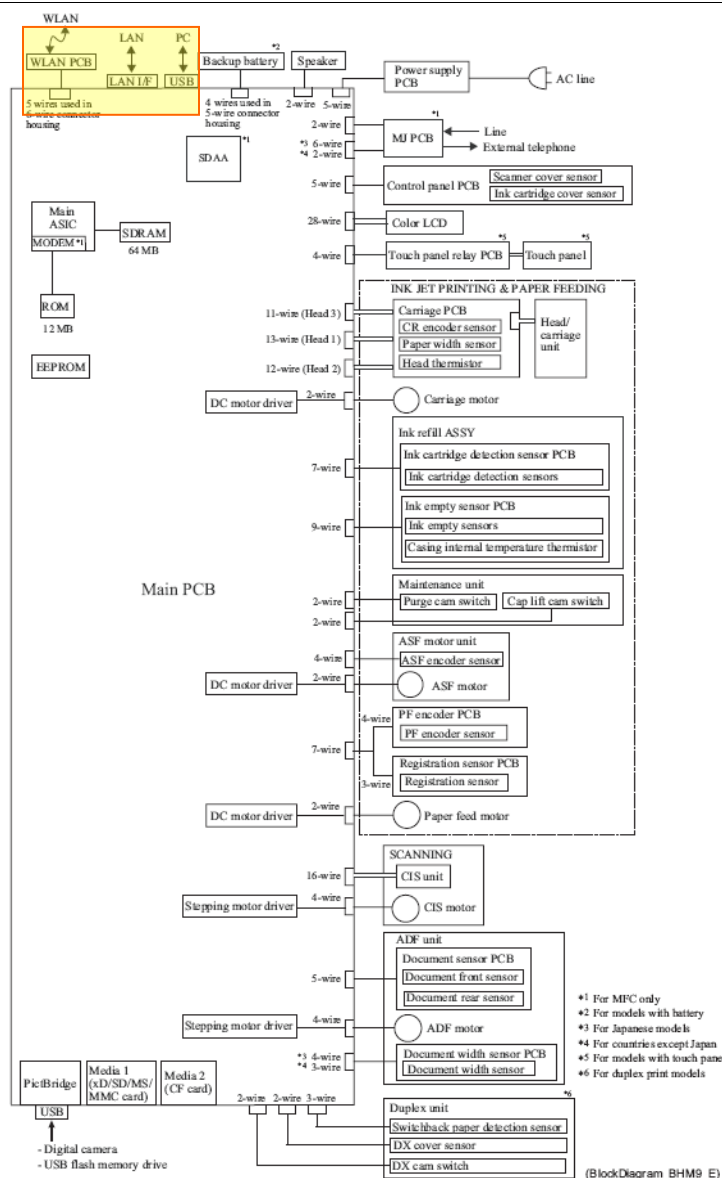
U.S. Patent Nos. 6,337,746 & 6,618,157

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Brother MFC-6490CW Service Manual, Appendix 5

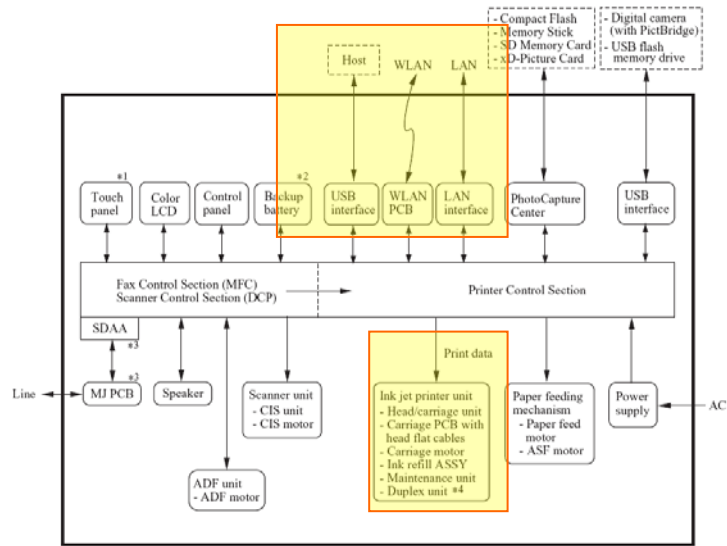
U.S. Patent Nos. 6,337,746 & 6,618,157



Brother MFC-6490CW Service Manual, p. 3-55

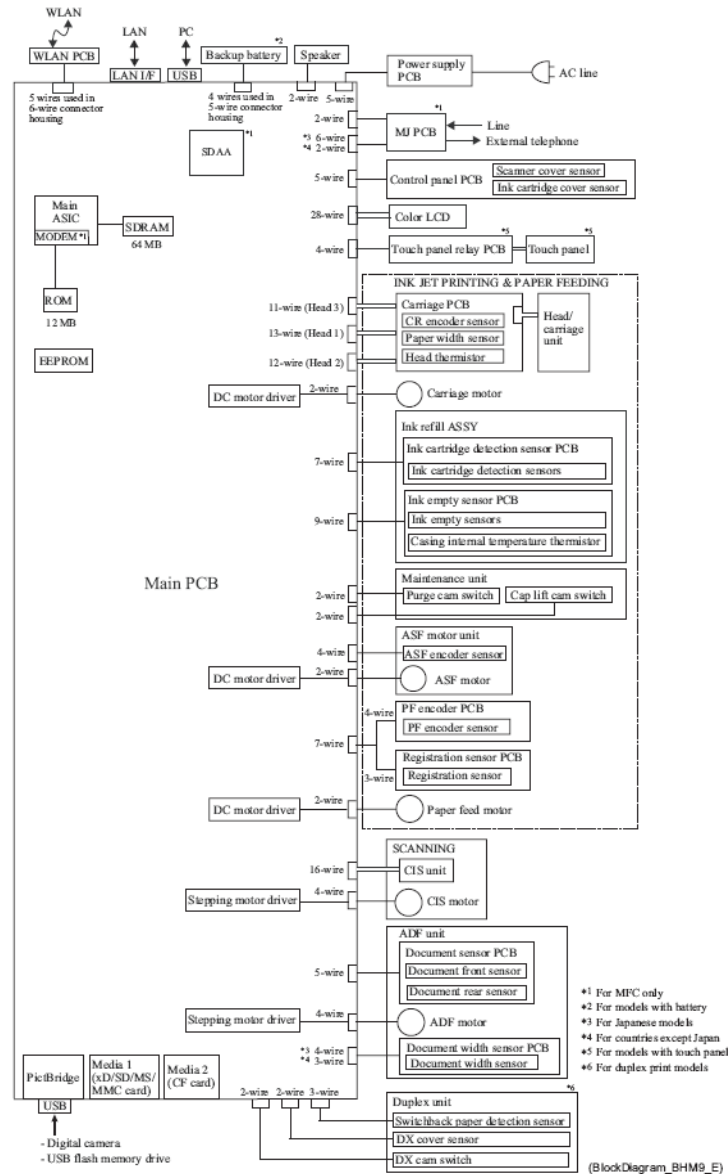
a digital printing device connected to said interface for printing the graphic image on the substrate on the basis of stored image data transferred from said random access memory, the digital printing device communicating with the data bus via the serial port;

The Accused System and Method include digital printing devices, which receive formatted digital data. This data is provided to the laser heads on the printer, which in turn activates to fuse color toners on print substrates to produce color images. Signals are communicated via the serial port.

U.S. Patent Nos. 6,337,746 & 6,618,157

Brother MFC-6490CW Service Manual, p.3-1

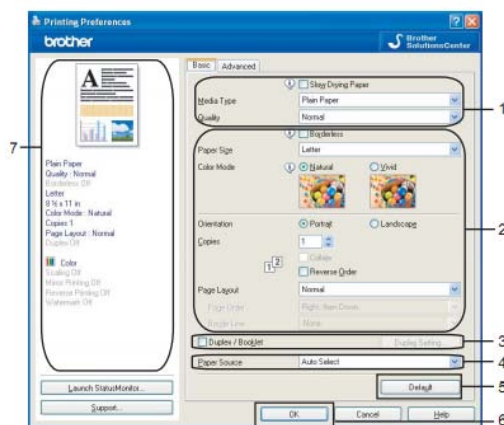
U.S. Patent Nos. 6,337,746 & 6,618,157



Brother MFC-6490CW Service Manual, p. 3-55



U.S. Patent Nos. 6,337,746 & 6,618,157



http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv_mfc6490w_usaeng_soft_d.pdf p.17 (3/31/11)

said printing device printing the graphic image in response to image data in a first format;

The formatted data at the printer engine is provided in a different format than the data stored in the RAM, namely a first format specific to the printing device's formatting requirements. The Accused System and Method is designed to print on a substrate. For example, the Accused System and Method is used for cut-sheet materials.

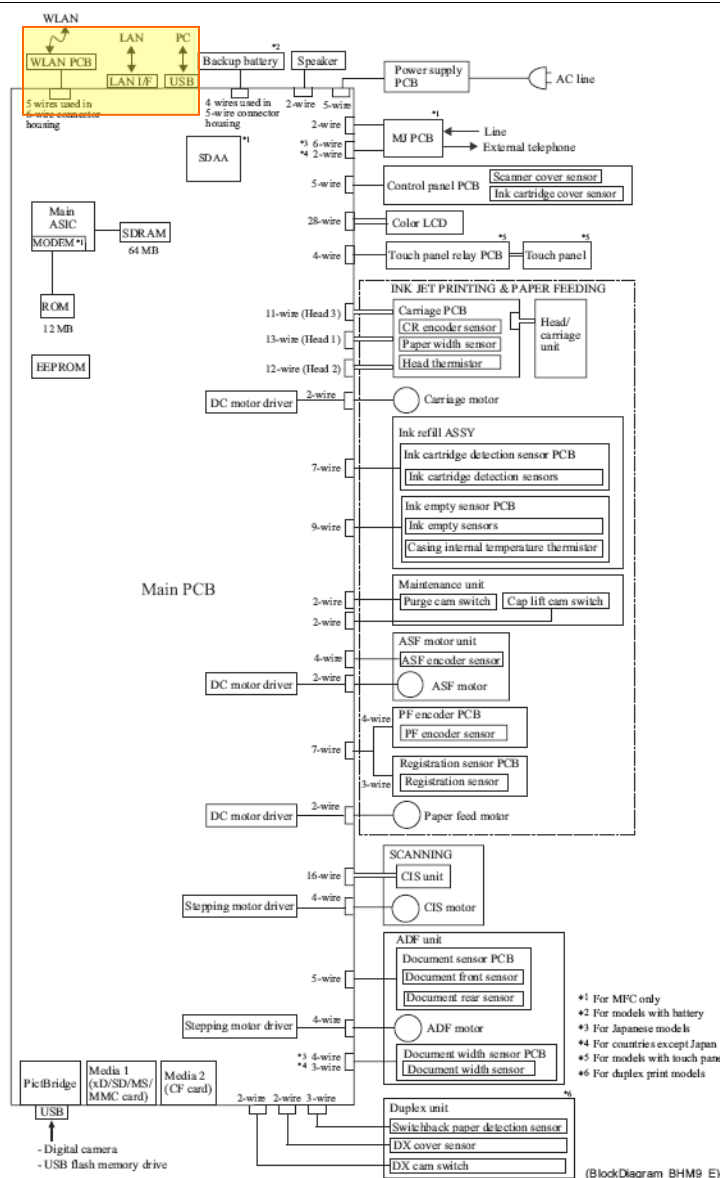
Print

[back to top](#)

Print Technology	Color Inkjet Technology
Maximum Printing Size	Up to 11" x 17" (Ledger)
Consumable Type	4-Cartridge Ink System
Max. Black Print Speed (ppm)	35ppm Black†
Max. Color Print Speed (ppm)	28ppm Color†
Print Resolution (maximum dpi)	Up to 6000 x 1200 dpi‡
Borderless Printing	Yes‡
Standard Input Paper Capacity (sheets)†	Up to 400-Sheet Input Capacity
Multi-purpose Tray	N/A
Standard Interface(s)	Hi-Speed USB 2.0, Ethernet, Wireless (802.11b/g), PictBridge Interface, Media Card Slots and USB Flash Memory Drive
Printer Driver Compatibility†	Windows® / Mac OS®
Mobile device printing app‡	Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Apple® iPhone®, iPad™, and iPod touch® or Android™ smartphone
Emulation(s)	GDI
Secure Print Function	Yes
Maximum Monthly Duty Cycle‡	5,000 Printed Pages
Recommended Monthly Print Volume‡	250 - 2000 Printed Pages

<http://www.brother-usa.com/MFC/modeldetail.aspx?PRODUCTID=MFC6490CW&tab=spec>

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[3] Head/carriage unit

The head/carriage unit consists of a front end (ink-jet head) and a back end (damper and air vent unit) as shown below.

The front end consists of metal plates laminated together and etched to form ink flow channels.

Piezoelectric ceramic actuators generate the spray pressure. The response of individual front ends to applied voltages and waveforms varies, however, because of the nature of piezoelectric materials, fluctuation in manufacturing accuracy, and other factors. The front end therefore leaves the production line with head property labels giving property data. The manufacturer writes this property data to the EEPROM on the main PCB incorporating this unit. Based on the property data of the front end, the processor drives piezoelectric ceramic actuators to insure consistent performance without fluctuations.

Brother MFC-6490CW Service Manual, p. 3-13

U.S. Patent Nos. 6,337,746 & 6,618,157Ink spray function

The head employs drop-on-demand ink-jet printing.

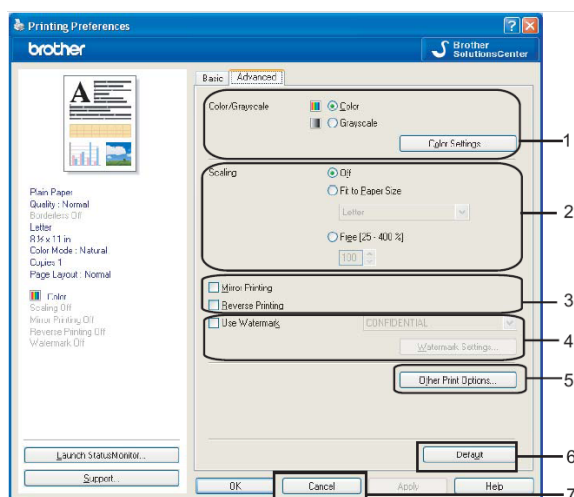
Print commands to the drive circuit apply a bias voltage to the layer electrodes on the piezoelectric ceramic surface stretching the elements perpendicular to that surface. Drive signals removing this voltage for specific channel electrodes allow the piezoelectric elements to return to their original shape, sucking ink into the corresponding channels*. Reapplying the bias voltage stretches the elements once again, applying pressure to the ink, spraying it from the head nozzle. The ink drop hits the paper on the platen, forming a dot.

* Pressure chambers for individual nozzles

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said means for storing image data storing image data in a second format different from the first format; and

RAM on the computer stores image data. The format of the stored data is different than that which is sent to the printer.



http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv_mfc6490w_usaeng_soft_d.pdf, p.14 (3/24/11)

Full Driver & Software Package

We recommend this download to get the most functionality out of your Brother machine. This is a comprehensive file containing available drivers and software for the Brother machine.

Language	Version	Size	Release Date	File
English	B1	40.95MB	03/04/2009	Download & Information

[Top](#)

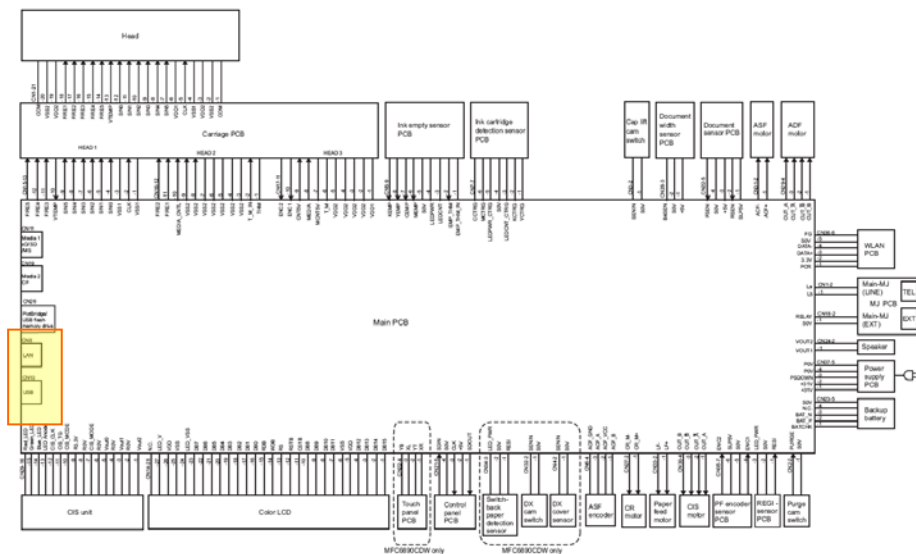
http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download_index.html?reg=us&c=us&lang=en&prod=mfc6490cw_all&dld=&flang=English&os=7&type2=-1 (3/31/11)

said means for transferring stored image data comprising conversion means for converting image data in the second format into image data in the first format by multiplexing different portions of the image data in the second

Image data stored in RAM is converted and formatted (including multiplexed) for delivery to the print engine over data interfaces.

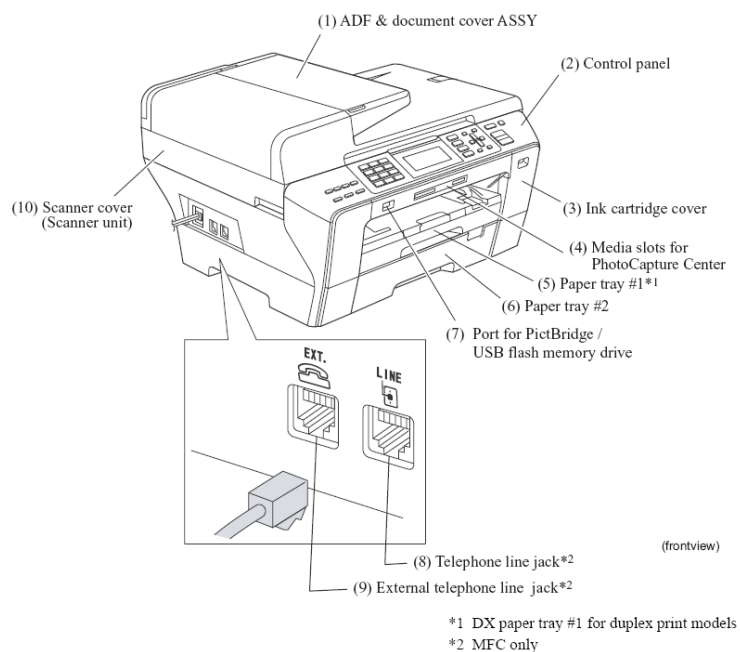
U.S. Patent Nos. 6,337,746 & 6,618,157

format and for delivering image data converted into the first format to said printing device.

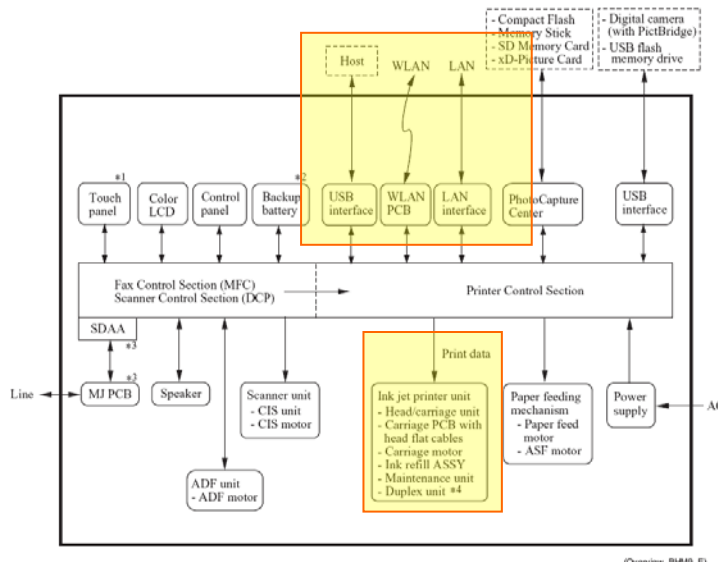


U.S. Patent Nos. 6,337,746 & 6,618,157

Brother MFC-6490CW Service Manual, Appendix 5



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Brother MFC-6490CW Service Manual, p.3-1

2. The apparatus according to claim 1 wherein said means for storing image data are operative for storing a quantity of image data sufficient to print the

The Accused System and Method is driven by a computer containing a motherboard with a data bus and memory. The computer is controlled by an operating system. Images are stored in RAM. The RAM on the computer is operative to store a sufficiently large amount of image data to print an entire color graphic image on the surface of the full substrate. The interface card transfers the entire quantity of image data for generating the graphic image on the